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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/276,917	03/26/1999	KARTIK S CHANDRAN	CISCP100	2820

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EXAMINER

NGUYEN, DUSTIN

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/276,917	CHANDRAN ET AL.	
	Examiner	Art Unit	
	Dustin Nguyen	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 28 and 30 are presented for examination.

Response to Arguments

2. Applicant's arguments filed 12/06/2005 have been fully considered but they are not persuasive.

3. As per remarks, Applicants' argued that (1) the term "empty" in Petty reference does not necessary mean dequeuing all of its contents at a separate time as claimed in claim 1, it merely connotes discharging at least some of the contents.

4. As to point (1), it is rejected for similar reasons as stated in the previous Office Action. Furthermore, Petty discloses dequeuing all of its contents at a separate time [i.e. a dequeue state machine transmits the contents of a current one of the shaping queues during each period [Abstract; lines 11-14]; and subject arrangement requires that only one queue be checked and its contents be transmitted during each dequeuing period [col 4, lines 3-5]]. In addition, Petty discloses the Generic Cell Rate Algorithm (GCRA) in which if the queue of a virtual circuit is empty, the traffic shaper does not transmit a cell from that queue, if a cell is available in the queue of a virtual circuit, the traffic shaper transmits it, and if more than one cell is available in the queue of a virtual circuit, the traffic shaper transmits one cell from the queue and the next

Art Unit: 2154

cell must wait at least until the subsequent processing period to be transmitted [i.e. dequeuing all of its contents at a separate time] [col 2, lines 36-57].

5. As per remarks, Applicants' argued that (2) the cited portions of the Petty patent do not show dequeuing all of cells from the queue, rather, the patent merely describes dequeuing a single cell at one time.

6. As to point (2), it is rejected for similar reasons to point (1) above. Furthermore, Petty discloses a dequeuing function dequeues cells from one of the shaper queues during each processing interval of 125 us [i.e. more than one cell] [1000-1006, Figure 10; col 7, lines 40-43; and col 9, lines 52-61].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 – 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan et al. [US Patent No 6,389,019], in view of Petty [US Patent No 6,621,792].

Art Unit: 2154

9. As per claim 1, Fan discloses the invention substantially as claimed including an apparatus for controlling data flow through a network, the apparatus comprising:

one or more processors [6, Figure 2; and col 6, lines 3-16];
memory coupled to at least one of the one or more processors [5A, 5B, Figure 3; and col 6, lines 13-26];

a plurality of time-based queues logically configured on the memory [1, Figure 1; and col 5, lines 12-20] and together defining a period of time with each time-based queue defining a separate increment of time within the period of time [i.e. time epoch to be served] [col 5, lines 30-44; and col 5, lines 55-col 6, lines 2];

wherein the processor is configured or designed to direct (i) data or (ii) grants to transmit data to particular time-based queues based upon network traffic shaping delays prescribed for the data or grants to transmit the data [i.e. cell arrival computation] [Figure 4; col 6, lines 30-40; and col 7, lines 22-28].

Fan does not specifically disclose that each time-based queue is set to dequeue all of its contents at a separate time, every time that a specified increment of time elapses.

Petty discloses each time-based queue is set to dequeue all of its contents at a separate time [141, Figure 1; and col 5, lines 65-col 6, lines 4], every time that a specified increment of time elapses [i.e. dequeue cells from one of the queues during each interval] [Figure 6; and col 7, lines 40-60].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Fan and Petty because Petty's teaching would enable adjusting dequeued information to prevent network congestion.

10. As per claim 2, Fan discloses the apparatus is a router [Abstract; and col 3, lines 9-14].

11. As per claim 3, Fan discloses the apparatus is a cable modem termination system [i.e. network] [col 1, lines 15-20].

12. As per claim 4, Fan does not specifically disclose the separate increments of time defined by the time-based queues are each of the same length. Petty discloses the separate increments of time defined by the time-based queues are each of the same length [i.e. interval of 125 us] [col 7, lines 40-43]. It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Fan and Petty because Petty's teaching would allow to control time interval for queueing and dequeuing to increase system performance.

13. As per claim 5, Petty discloses the separate increments of time defined by the time-based queues are configurable [i.e. tailor to serve different traffic] [col 5, lines 57-60; col 7, lines 61-65; and col 10, lines 3-7].

14. As per claim 6, Petty discloses the periods of time defined by the plurality of time-based queues are configurable [col 9, lines 5-24].

15. As per claim 7, Fan discloses the one or more processors are further configured or designed to determine network traffic shaping delay [col 6, lines 30-40].

16. As per claim 8, Fan discloses the one or more processors are further configured or designed to discard data or a request to grant transmission of data if a network traffic delay is greater than the period of time defined by the plurality of time-based queues [i.e. drop cells] [col 5, lines 12-19].

17. As per claim 9, Fan discloses the one or more processors are further configured or designed to transmit, without buffering in a time-based queue, the data or issue grants to transmit data if there is no network traffic shaping delay [i.e. the cell is eligible to go out immediately] [col 7, lines 14-18].

18. As per claim 10, Fan discloses the one or more processors are further configured or designed to direct network packets of varying sizes to the time-based queues [col 6, lines 6-8; and col 9, lines 35-43].

19. As per claim 11, Fan discloses the apparatus is configured or designed to simultaneously buffer, in a single time-based queue, data or grant to transmit data from a plurality of network nodes [i.e. simultaneously eligible to transmit] [Abstract].

20. As per claim 12, it is rejected for similar reasons as stated above in claim 1. Further more, Fan teaches traffic shaping means for determining how long to buffer data or grants to transmit data [Figure 2; and col 6, lines 3-16].

21. As per claim 13, Fan discloses the traffic shaping means also directs the data or grant to ~~transmit data to particular time-based queues based upon a determined length of time for~~ buffering [col 18, lines 12-19 and lines 24-31].

22. As per claim 14, Fan discloses a policing means for determining whether to buffer the data or grants to transmit data [col 17, lines 42-53].

23. As per claim 15, it is rejected for similar reasons as stated above in claims 1 and 14. Furthermore, Fan discloses determining that transmitting additional data to or from a network node will exceed a maximum allowed data flow for the network node [col 17, lines 50-67].

24. As per claim 16, Fan discloses receiving data addressed to the network node prior to determining that transmitting additional data will exceed the maximum allowed data flow, and wherein the data addressed to the network node is the additional data [i.e. congestion information] [col 3, lines 35-43].

25. As per claim 17, Fan discloses receiving data sent by the network node prior to determining that transmitting the additional data will exceed the maximum allowed data flow, and wherein the data sent by the node is the additional data [col 3, lines 35-50].

Art Unit: 2154

26. As per claim 18, Fan discloses the calculating a network capacity used by the network node if the additional data was to be transmitted, the calculation being performed prior to determining that transmitting the additional data will exceed the maximum allowed data flow [i.e. rate computation] [col 16, lines 40-64].

27. As per claim 19, Fan discloses the information of determining a delay until the additional data can be transmitted, wherein the determined delay is used to select the time-based queue [i.e. delay variation] [col 10, lines 49-67].

28. As per claim 20, Fan discloses the time-based queue is selected by matching its time to dequeue with the delay determined for the additional data [i.e. traffic shaper] [col 6, lines 30-40].

29. As per claim 21, Fan discloses dequeuing the additional data; and transmitting the additional data without exceeding the maximum allowed data flow for the network [col 20, lines 65-col 21, lines 8].

30. As per claim 22, it is rejected for similar reasons as stated above in claims 8, 15, and 19. Furthermore, Fan discloses receiving new data that does not form part of the additional data [col 12, lines 32-36].

31. As per claim 23, it is rejected for similar reason as stated above in claim 5.

32. As per claim 24, it is rejected for similar reasons as stated above in claims 6 and 7.

33. As per claims 25, 28 and 30, they are apparatus of claim 15, they are rejected for similar reasons as stated above in claim 15.

34. As per claim 26, it is rejected for similar reason stated above in claim 18.

35. As per claim 27, it is rejected for similar reasons as stated above in claim 22.

36. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2154


Conclusion

-----Any inquiry concerning this communication or earlier communications from the -----
examiner should be directed to Dustin Nguyen whose telephone number is (571) 272-3971. The
examiner can normally be reached on flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Follansbee John can be reached on (571) 272-3964. The fax phone number for the
organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dustin Nguyen
Examiner
Art Unit 2154

 **JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**